

## **ABSTRACT**

A method for authenticating a textile material that is initiated by selecting a unique nucleic acid marker having a specific length and a specific sequence. A media that causes the unique nucleic acid marker to adhere to a fibrous material is then selected. The method then proceeds to generate a nucleic acid marker mixture by mixing the media with the nucleic acid marker. The nucleic acid marker mixture is then applied to the fibrous material. A marked fibrous material is produced by marking the fibrous material with the nucleic acid marker. The textile material is manufactured with the marked fibrous material. The textile material is then authenticated by detecting the unique nucleic acid marker with primers that are specific to the unique nucleic acid.

In an alternative embodiment, the media is used as a topical treatment for the fibrous material. In another alternative embodiment, the media is a carrier media that can be added to one or more fiber manufacturing processes without affecting each of the manufacturing processes. In yet another alternative embodiment, a viscous solution for fiber spinning is selected and mixed with the nucleic acid marker to generate a viscous dope that is extruded through an opening in a spinneret to form a marked fiber that is used to generate the textile material.